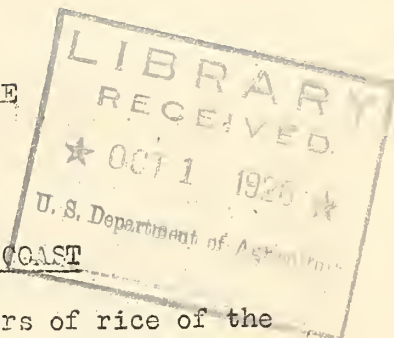


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UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF BIOLOGICAL SURVEY



BLACKBIRDS AND THE RICE CROP ON THE GULF COAST

Blackbirds have been a source of trouble to growers of rice of the Gulf coast of Louisiana and Texas ever since that grain was introduced into the southern prairie region. In many respects the problem is similar to that formerly presented by the bobolink in the South Atlantic States before the rice crop had been largely removed from that area. Damage is inflicted in spring, when the sprouting grain is a source of attraction; in midsummer, when the crop is in the "milk" or "dough" stage; and at the harvest, when the shocked grain may be attacked not only by red-winged blackbirds, the principal offenders, but also by the larger jackdaws, and, if the crop is late, by migratory blackbirds from northern States.

AREA AFFECTED

In 1925 and 1926 a thorough study was made of this problem, particularly with the object of learning what measures could be adopted to lessen the annual losses suffered by rice growers. This survey revealed interesting facts. In the first place the area of severe blackbird damage, in which noticeable losses are experienced almost every year, is a very narrow one, following the southern edge of the rice area that borders on the extensive marshes lying along the Gulf coast. In some instances this zone of severe damage can be traced as a single line of fields adjacent to the marsh. Three or four miles from the borderline severe blackbird damage is of irregular occurrence, depending largely on the presence of trees or local sloughs that are an attraction to the birds. In the central and northern portions of the rice belt, where the land has been under cultivation for a longer period of years and where most marsh areas attractive to blackbirds have been removed by drainage, noticeable damage to the rice crop is seldom experienced.

EXTENT OF DAMAGE VARIES

Not only is the zone of severe blackbird damage narrow, making the problem of relief a local one, but from year to year there may be great fluctuation in the extent and severity of damage. Rains during the sprouting season tend to increase damage by making the surface of the ground soft and easily probed by the birds. A harvest delayed by inclement weather also exposes the shocked crop to the attacks not only of the resident blackbirds but also of migrants from the north that arrive in October and November. Climatic conditions, such as the prolonged drought that occurred during the latter part of 1924 and the early part of 1925, also have an effect on the activities of the birds, causing them to avoid vast areas of burned-over marsh that normally support a large breeding population.

In 1924 experiments conducted by one of the rice-growing companies of Louisiana indicated a crop loss as great as 22 per cent on certain fields close to the virgin marsh. In the following year similar experiments, many of which were carried out in the same fields, revealed no appreciable damage. On the basis of the total rice area of Louisiana, including the zone of severe damage as well as the great acreage in which there seldom is injury, the average annual damage to the rice crop inflicted by blackbirds probably does not exceed 1 per cent of the yield. Although such an estimate might appear to minimize the importance of this problem, it must not be overlooked that the great bulk of the damage inflicted is confined to a limited area, and in that area rice growers have suffered severe losses. It was with the object of remedying conditions there that experiments in blackbird control were carried out.

### WANDERING FLOCKS

Blackbirds are nomads. Daily they make trips to and from their feeding grounds in the ricefields and their roosts in the marshes. Sometimes their flocks number tens of thousands, and, with an ample food supply before them, may be found here on one day and, on the following, miles away. At times, however, they will persist in levying toll on particular fields and may be found day after day in one section. Suddenly they may leave and, like a tornado, strike at some distant point. Unlike a colony of field mice, ground squirrels, or other rodent pests that always are to be found not far from their runways or burrows, the presence of blackbird flocks can not be predicted with certainty. This is especially true during the ripening period and the harvest, when there is food to be had everywhere. Even during planting season, when the natural food supply is at its lowest ebb and the newly seeded ricefields are the principal attraction to the birds, their uncertain wanderings prevent the carrying out of consistently successful control measures.

### CONTROL BY USE OF POISON

There is little difficulty in killing a certain number of the birds through poisoning operations at planting time, a practice that has been followed for years by some of the borderline rice growers. As a basis for a material reduction in the resident blackbird population of the Gulf coast area, however, poisoning has proved to be an uncertain and expensive undertaking. Not only do the wandering habits of the birds often result in baited areas being wholly overlooked, but experiments have shown that wherever an appreciable number have been killed the frightening effect produced tends to drive away the remaining birds. In this manner success works against future success in the same area, necessitating a constant shift in the scene of operations. Periods of rain, so frequent in the Gulf coast region during the spring months, also must be reckoned with, since not only does a hard downpour bury or wash away much of the bait, but its poisonous qualities also are destroyed. Rains at intervals of three or four days or a week, easily



may completely frustrate poisoning operations during the entire planting season through the destruction of baits.

It is because of these obstacles that the Biological Survey does not favor the inauguration of a systematic anti-blackbird campaign throughout the Gulf coast area to remedy a situation that is admittedly serious in a narrow zone along the southern border of the rice belt. Farmers living in this zone can obtain a certain degree of relief from damage at sprouting time through the frightening effect of poisoned baits. Even when distributed at planting time, which normally is about 10 days previous to the sprouting period, poisoned baits may exert a deterrent effect that will last until the sprouts begin to appear. This is quite likely to be the case if a number of neighbors carry out such measures simultaneously. It also may happen that the distribution of baits in late-planted fields will, by driving the birds away, result in the protection of neighboring fields that are sprouting. To such an extent the use of poisoned baits may be adopted to advantage by individual farmers or groups of farmers.

During the growing and ripening periods and while the crop is in the shock, poisoning is utterly futile. At these times bird minding with the shotgun is the commonest and, though expensive, nevertheless the most satisfactory course to follow.

#### PREPARING AND DISTRIBUTING POISONED BAIT

For those farmers who wish to avail themselves of the deterrent effect of poisoned bait, the following directions for preparing it are given:

The process is a simple one, rough rice being soaked in a solution of strychnine sulphate. The resultant bait should contain 1 ounce of strychnine to every 10 quarts (dry measure) of rice. This can be prepared by dissolving 1 ounce of strychnine sulphate (either crystals or powder) in 2 1/2 quarts of boiling water. Pour this over 10 quarts (dry measure) of dry rough rice and stir until the entire mass of grain is thoroughly wet. If this is done in an old milk can or other container with a tightly fitting cover it can be turned over and otherwise agitated every two or three hours or when convenient. At the end of 24 hours it will be found that practically all the solution has been absorbed. Bait of this strength closely approximates that which has been used for years by some of the French-speaking rice growers of Louisiana, who have been accustomed to using 1/8 ounce of strychnine to every gallon of rice. If not used immediately the grain may be spread out to dry. In any event, the bait should be kept out of the reach of children, irresponsible persons, and livestock.

It is difficult to prescribe the proper quantity of bait to distribute. Frequently the planter has a few quarts of bait beside him as he rides the drill, and scatters a little of it now and then as he circles the field. Distributing the bait afoot, as a separate operation after

the field has been drilled, will involve extra labor, but it will insure a more satisfactory distribution, as it is easier to avoid areas of rough ground in which much of the grain would disappear beneath clods of earth. By dropping the bait in the smooth wheel tracks of the drill, little will be lost. To cover a field satisfactorily it will be necessary to scatter such lines of bait at intervals of 25 or 30 feet. The grain may be allowed to filter slowly through the fingers as the farmer walks at a moderate pace. When scattered in this manner about five quarts of bait will be needed to the acre.

#### FURTHER STUDIES

The relation of blackbirds to the rice crop of the Gulf coast is to be the subject of a more extensive paper, now in the process of preparation. This bulletin will discuss more fully not only the nature and extent of blackbird damage and measures of relief, but it will also point out the beneficial habits that these birds display at certain seasons of the year. This information has been obtained through the examination of an extensive series of stomachs. Due announcement will be made when the bulletin is published, and copies may then be had on request.

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Area Affected

Some years ago a thorough study was made of this problem, particularly with the object of learning what measures could be adopted to lessen the annual losses suffered by rice growers. This survey revealed interesting facts. In the first place the area of severe blackbird damage, in which noticeable losses are experienced almost every year, is a very narrow one, following the southern edge of the rice area that borders on the extensive marshes lying along the Gulf coast. In some instances this zone of severe damage can be traced as a single line of fields adjacent to the marsh. Three or four miles from the borderline severe blackbird damage is of irregular occurrence, depending largely on the presence of trees of local sloughs that are an attraction to the birds. In the central and northern portions of the rice belt, where the land has been under cultivation for a longer period of years and where most marsh areas attractive to blackbirds have been removed by drainage, noticeable damage to the rice crop is seldom experienced.

Extent of Damage Varies

Not only is the zone of severe blackbird damage narrow, making the problem of relief a local one, but from year to year there may be great fluctuation in the extent and severity of damage. Rains during the sprouting season tend to increase damage by making the surface of the ground soft and easily probed by the birds. A harvest delayed by inclement weather also exposes the shocked crop to the attacks not only of the resident blackbirds but also of migrants from the north that arrive in October and November. Climatic conditions, such as the prolonged drought that occurred during the latter part of 1924 and the early part of 1925, also have an effect on the activities of the birds, causing them to avoid vast areas of burned-over marsh that normally support a large breeding population.



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### Control By Use of Poison

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#### Preparing and Distributing Poisoned Bait

For those farmers who, after informing themselves of State and local regulations relative to the use of poisons, wish to avail themselves of the deterrent effect of poisoned bait, the following directions for preparing it are given:

The process is a simple one, rough rice being soaked in a solution of strychnine sulphate. The resultant bait should contain 1 ounce of strychnine to every 10 quarts (dry measure) of rice. This can be prepared by dissolving 1 ounce of strychnine sulphate (either crystals or powder) in 2 1/2 quarts of boiling water. Pour this over 10 quarts (dry measure) of dry rough rice and stir until the entire mass of grain is thoroughly wet. If this is done in an old milk can or other container with a tightly fitting cover it can be turned over and otherwise agitated every two or three hours or when convenient. At the end of 24 hours it will be found that practically all the solution has been absorbed. Bait of this strength closely approximates that which has been used for years by some of the French-speaking rice growers of Louisiana, who have been accustomed to using 1/8 ounce of strychnine to every gallon of rice. If not used immediately the grain may be spread out to dry. In any event, the bait should be kept out of the reach of children, irresponsible persons, and livestock.

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